

REMARKS

In view of the above amendments and the following remarks, reconsideration of the rejections contained in the Office Action of May 24, 2011 is respectfully requested.

By this Amendment, claims 1, 2, 5, 6, 9, 10, 12-16, 19 and 21-23 have been amended, and new claims 24 and 25 have been added. Thus, claims 1-25 are currently pending in the application, with claims 6-8, 10, 16-19 and 23 having been withdrawn from consideration. No new matter has been added by these amendments.

Revisions have been made to the specification, as indicated above. No new matter has been added by the revisions. In particular, it is noted that the amendments made to pages 1 and 6 of the original specification are supported at least by page 8, lines 13-21, and page 8, line 25 through page 9, line 11 of the original specification, as well as by original claims 13, 14, 22 and 23. Entry of the amendments to the specification is thus respectfully requested.

On page 2 of the Office Action, the Examiner objected to the drawings as being improper. In particular, the Examiner noted that the reference number 26 in Fig. 3 is improperly used to designate both the marker and the retainer. In this regard, it is noted that page 7, line 24 through page 8, line 2 of the original specification indicates that the groove 25 which retains the lubricant can function as the marker 26, and that the marker 26 may double as the lubricant reservoir groove 25. In Fig. 3, the groove retaining the lubricant is identified with the reference number 25, and the reference number 26 (in parenthesis next to reference number 25) indicates that the groove 25 is also functioning as the marker 26 (or that the marker 26 is doubling as the groove 25). In other words, reference number 26 is not used to identify the retainer in Fig. 3, as suggested by the Examiner. Rather, the reference characters 25(26) of the embodiment shown in Fig. 3 indicate that the functions of the groove 25 and the marker 26 can be combined together. Therefore, it is respectfully submitted that the Examiner's objection regarding reference number 26 is not applicable to the drawings.

Further, the Examiner objected to the drawings as failing to show all of the features recited in the claims. In particular, the Examiner indicated that the drawings do not show a "calculating means," a "driving motor" or a "control unit." In order to address this objection, replacement Figs. 1-9 and a new Fig. 10 have been submitted under separate cover along with this amendment.

In particular, a reference number 13 has been incorporated into replacement Figs. 1, 2

and 6-8 in order to identify the driving motor. Further, new Fig. 10, which schematically illustrates a robot, has been added in order to identify a controller 101 and a calculator 102. It is noted that the amendments to the drawings are supported at least by page 8, lines 13-21, and page 8, line 25 through page 9, line 11 of the original specification, as well as by original claims 13, 14, 22 and 23. No new matter has been added by the amendments to the drawings. Therefore, entry of replacement Figs. 1-9 and new Fig. 10 is respectfully requested. Further, as all of the features recited in the claims are shown in the amended drawings, it is respectfully submitted that the Examiner's objection is not applicable to the drawings as amended.

On page 3 of the Office Action, the Examiner objected to the specification. In particular, the Examiner indicated that the listing of reference numbers should be removed from the specification. In this regard, it is noted that the listing of reference numbers has been deleted from the specification, as shown above. Thus, it is respectfully submitted that the Examiner's objection is not applicable to the revised specification.

On pages 4-6 of the Office Action, the Examiner rejected claims 9, 12-14, 21 and 22 under 35 U.S.C. § 112, second paragraph, as being indefinite. In particular, the Examiner indicated that the phrase "the lubricant" in claim 9 lacks proper antecedent basis. Further, with regard to the phrase "the first positioning member interacts at a position of a mechanical origin of the joint" in claims 12 and 21, the Examiner indicated that the meaning of the term "interacts" is unclear, and that it is also unclear what the first positioning member interacts with. In addition, the Examiner indicated that the phrases "calculating means" and "control unit" are improper and/or unclear means-plus-function limitations under 35 U.S.C. § 112, sixth paragraph.

In response to these formal rejections, it is noted that claim 9 has been amended so as to provide proper antecedent basis for the lubricant. Further, the word "interacts" has been deleted from claims 12 and 21, and claims 12 and 21 have been amended to recite that the first positioning member "contacts the contacting portion." Lastly, it is noted that the amended claims do not contain any means-plus-function limitations. In particular, the word "means" has been deleted from claims 13 and 22, and it is noted that the recitation that the robot includes a "control unit" in claim 14 does not automatically invoke 35 U.S.C. § 112, sixth paragraph. Therefore, for the reasons discussed above, it is respectfully submitted that the Examiner's formal rejections under § 112 are not applicable to the amended claims.

On pages 6-8 of the Office Action, the Examiner rejected claims 1, 5 and 12 under 35

U.S.C. § 103(a) as being unpatentable over JP 2002-239967 in view of Gutknecht (US 4,932,313). On pages 8-10 of the Office Action, the Examiner rejected claims 2, 4, 9, 15 and 21 under 35 U.S.C. § 103(a) as being unpatentable over JP 2002-239967 in view of Terzian et al. (US 3,648,408). Further, on pages 10-15 of the Office Action, the Examiner rejected claims 3, 11, 13, 14, 20 and 22 under 35 U.S.C. § 103(a) as being unpatentable over JP 2002-239967 in view of the additionally applied prior art. For the reasons discussed below, it is respectfully submitted that the amended claims are clearly patentable over the prior art of record.

Amended independent claim 1 recites an industrial robot having a joint, wherein the joint includes a first member and a second member rotatable relative to the first member. Further, claim 1 recites that the first member includes a first hole provided in the first member, a first positioning member contained in the first hole, with the first positioning member being projectable from the first hole, and *a first attaching member configured to fix the first positioning member at a bottom of the first hole*. Claim 1 also recites that the second member includes a contacting portion arranged to contact the first positioning member when the first positioning member is projected from the first hole, and that *the first positioning member includes a retainer for a lubricant on a side thereof*.

Amended independent claim 2 recites an industrial robot having a joint, wherein the joint includes a first member and a second member rotatable relative to the first member. Further, claim 2 recites that the first member includes a first hole provided in the first member, a first positioning member contained in the first hole, with the first positioning member being projectable from the first hole, and *a first attaching member configured to fix the first positioning member at a bottom of the first hole*. Claim 2 also recites that the second member includes a contacting portion arranged to contact the first positioning member when the first positioning member is projected from the first hole, and that *the first positioning member includes a first marker on a side thereof, and the first marker specifically indicates a projection length of the first positioning member*.

JP 2002-239967 (hereinafter JP '967) discloses a robot which includes an upper arm 5 rotatably connected to a twist arm 6, and that the upper arm 5 includes a screw hole 24 and a positioning pin 25 screwed into the screw hole 24. JP '967 discloses that in a positioning operation, the pin 25 abuts against an abutment face 30 on the twist arm 6, and the positioning pin 25 is then removed.

However, JP '967 does not disclose *a first attaching member configured to fix the first positioning member at a bottom of the first hole*, as required by independent claims 1 and 2. Rather, JP '967 discloses that the positioning pin 25 is screwed into screw hole 24 such that threads on the positioning pin 25 engage grooves in the side surfaces of the screw hole 24, but does not disclose a first attaching member configured to fix the positioning pin at a bottom of the first hole, as required by independent claims 1 and 2.

Further, as noted by the Examiner on page 7 of the Office Action, JP '967 does not disclose that *the first positioning member includes a retainer for a lubricant on a side thereof*, as required by claim 1. In this regard, the Examiner cites Gutknecht as disclosing the concept of placing a groove 38 on a side of a piston for retaining a lubricant, and concludes that it would have been obvious to modify the positioning pin of JP '967 to include a groove as taught by Gutknecht.

Similarly, as noted by the Examiner on page 9 of the Office Action, JP '967 does not disclose that *the first positioning member includes a first marker on a side thereof, and the first marker specifically indicates a projection length of the first positioning member*, as required by claim 2. In this regard, the Examiner cites Terzian as disclosing the concept of using a marker on a cam drum in order to indicate a starting position, and concludes that it would have been obvious to modify the positioning pin of JP '967 to include a marker to identify a desired position on the pin.

However, it is noted that none of the Gutknecht and Terzian references discloses *a first attaching member configured to fix the first positioning member at a bottom of the first hole*, as required by independent claims 1 and 2. Thus, as none of the JP '967, Gutknecht and Terzian references discloses a first attaching member configured to fix the first positioning member at a bottom of the first hole, it is respectfully submitted that the combination of the JP '967, Gutknecht and Terzian references does not disclose or suggest a first attaching member configured to fix the first positioning member at a bottom of the first hole, as required by independent claims 1 and 2.

Therefore, for the reasons presented above, it is believed apparent that the present invention as recited in independent claims 1 and 2 is not disclosed or suggested by the JP '967 reference, the Gutknecht reference and the Terzian reference taken either individually or in combination. Accordingly, a person having ordinary skill in the art would clearly not have

modified the JP '967 reference in view of the Gutknecht reference or the Terzian reference in such a manner as to result in or otherwise render obvious the present invention of independent claims 1 and 2.

Further, it is respectfully submitted that the additional references applied by the Examiner in the rejections of the dependent claims do not cure the defects of the JP '967 reference and the Gutknecht and Terzian references, as discussed above.

Therefore, it is respectfully submitted that independent claims 1 and 2, as well as claims 3-25 which depend therefrom, are clearly allowable over the prior art of record.

In addition, it is noted that independent claims 1 and 2 are generic to the non-elected dependent claims 6-8, 10, 16-19 and 23. As independent claims 1 and 2 are patentable over the applied prior art for the reasons discussed above, it is respectfully requested that withdrawn claims 6-8, 10, 16-19 and 23 be rejoined with the elected claims and similarly be considered to be patentable.

Further, the Examiner's attention is directed to the dependent claims which further define the present invention over the prior art. For example, new claims 24 and 25, which depend from claims 1 and 2, respectively, each recite that the first positioning member is *mounted within the first hole so as to be movable between a position in which an entirety of the first positioning member is arranged within the first hole, and a position in which the first positioning member projects from the first hole, while remaining fixed at the bottom of the first hole by the first attaching member*. In this regard, it is respectfully submitted that the prior art of record does not disclose or suggest the limitations of new dependent claims 24 and 25.

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is clearly in condition for allowance. An early notice to that effect is respectfully solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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